IN THE CLAIMS

1. (currently amended) An optical transmitter comprising:

a header mounted on a first pedestal;

a hybrid subassembly mounted on a second pedestal;

a laser mounted on the header;

a laser driver mounted on the hybrid subassembly; and

an air trench formed between the first pedestal ~~header~~ and the second pedestal; ~~hybrid subassembly~~

wherein the air trench provides thermal decoupling of the laser driver from the laser; and

wherein the header includes a first material at a location adjacent to the laser, and the first pedestal includes a second material at a location adjacent to a lower portion of the air trench, wherein the second material has a higher thermal conductivity than the first material.

(FIRST OCCURRENCE)

2. Canceled

(SECOND OCCURRENCE)

2. (currently amended) The optical transmitter of claim 1, wherein the hybrid subassembly ~~header~~ includes a third material at a location adjacent to the laser driver, and the second pedestal includes a fourth material at a location adjacent to the lower portion of the air trench, wherein the fourth material has a higher thermal conductivity than the third material ~~first pedestal and a second pedestal, wherein the laser is mounted on a first pedestal and the laser driver is mounted on the second pedestal, and wherein the first pedestal is located on the header and the second pedestal is located on the hybrid subassembly~~.

3. Canceled

4. (currently amended) The optical transmitter of claim 1 ~~3~~, wherein energy is applied from the laser driver to the laser through a waveguide disposed remotely from the header.

5. (original) The optical transmitter of claim 4, wherein the waveguide is a path that directs energy transmitted from the laser driver to the laser.

6. (original) The optical transmitter of claim 5, wherein the path has a curvature that directs the energy at a concentrated region in the laser.

7. (original) The optical transmitter of claim 1, wherein the laser is a semiconductor laser.

8. (original) The optical transmitter of claim 1, further comprising an external cooler thermally coupled to the header.

9. Canceled

10. (currently amended) The optical transmitter of claim 2 ~~9~~, wherein the air trench forms a sufficient vertical distance to limit thermal coupling between the laser driver and the laser via the first pedestal and the second pedestal.

11. (currently amended) The optical transmitter of claim 2 ~~9~~, wherein the first pedestal includes multiple layers of the ~~a~~ first material ~~at a location adjacent to the laser driver and a second material at a location adjacent to the lower portion of the air trench, wherein the second material has a lower~~

~~thermal conductivity than the first material~~.

12. (currently amended) The optical transmitter of claim 2 ~~9~~, wherein the hybrid subassembly ~~second pedestal~~ includes multiple layers of the third ~~a first~~ material ~~at a location adjacent to the laser and a second material at a location adjacent to the lower portion of the air trench, wherein the second material has a lower thermal conductivity than the first material~~.

13. (currently amended) The optical transmitter of claim 2 ~~9~~, wherein the ~~first pedestal includes a first material at a location adjacent to the laser driver and a~~ second material and the fourth material form a same layer of material with the air trench extending therein ~~at a location adjacent to the lower portion of the air trench, wherein the second material has a lower thermal conductivity than the first material, and wherein the second pedestal includes a third material at a location adjacent to the laser and a fourth material at a location adjacent to the lower portion of the air trench, the fourth material has a lower thermal conductivity than the third material, wherein thermal energy is limited from passing from the fourth material to the third material~~.

Claims 14 to 25 (Canceled)

26. (new) The optical transmitter of claim 1, wherein the first material is selected from the group consisting of: Silicon, Sapphire, Aluminum Nitride, Diamond, and Alumina.

27. (new) The optical transmitter of claim 1, wherein the first material is Silicon, and the second material is Copper Tungsten.

28. (new) The optical transmitter of claim 2, wherein the third material is selected from the group consisting of: Aluminum Nitride, Beryllium Oxide, Silicon Carbide, Diamond, Sapphire, and Alumina.

29. (new) The optical transmitter of claim 2, wherein the third material is Aluminum Nitride.

30. (new) The optical transmitter of claim 26, wherein the third material is selected from the group consisting of: Aluminum Nitride, Beryllium Oxide, Silicon Carbide, Diamond, Sapphire, and Alumina.

31. new) The optical transmitter of claim 27, wherein the third material is Aluminum Nitride.

32. (new) The optical transmitter of claim 31, wherein the fourth material is Copper Tungsten.

33. (new) The optical transmitter of claim 2, wherein the fourth material is Copper Tungsten.

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IN THE DESCRIPTION

Delete Page 3, line 18 to Page 7, line 15

Page 7, lines 16 to 19

Accordingly, the present invention ~~Yet another aspect~~ relates to an optical transmitter comprising a header or optical bench, a hybrid subassembly, a laser mounted on the header or optical bench, and a laser driver mounted on the hybrid subassembly. An air trench is formed between the header or ~~transmitter~~ optical bench and the hybrid subassembly.

Delete Page 7, line 20 to Page 11, line 2

Page 11, lines 20 to 21

FIG. 8A shows a partially exploded perspective view of an optical receiver subassembly;
FIG. 8B shows a magnified partial section of the ceramic wall of FIG. 8A;

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The spacing between the adjacent vias 218 is selected to limit transmission of EMI, of the desired wavelengths, through the device package case 122 to partially form the Faraday cage 840. The spacing distance should be less than a quarter wavelength ($\lambda/4$) of the highest operating frequency component requiring attenuation. The vias 218, as such, extend in a direction substantially perpendicular to the baseplate 170 and the lid 206. As shown in Figs. 8A and 8B ~~FIG. 8~~, the ceramic wall portion 208 includes a plurality of cofired ceramic

layers 302 (some of ceramic layers may be metalized). Metalization layers are thus formed between or above certain ones of the cofired ceramic layers 302 as shown in FIGs. 10, 12, 13, and 15.

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Light can travel within the optical isolator 3600 in a direction generally parallel to, or slightly angled from, the optical element axis 3804. The optical isolator 3600 is configured so that light, represented by arrow 3820, from a laser, such as 1102 shown in FIG.22A, can be directed therethrough. If light 3820 emitted from the laser 1102 is reflected from the optical isolator 3600 back to the laser, degradation can result to the optical signal. As such, the optical element axis 3804 is configured at an angle, so that none of the incident light 3820 from the laser that is reflected off of the surface of the first optical element, reflects back toward the laser. As such, any light 3820 emitted from the laser 1102, which the contacts the optical element 3606 will typically pass through the optical element represented by arrow 3822, however, any light that is reflected from the optical element will not be reflected back to the laser.

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As shown in FIG.35, each one of a plurality of magnetic polar sources 3604 has its own magnet axis 3802. Each magnetic polar source 3604 has a length (L1) that extends beyond the length (L2) of the optical element 3606. The optical element 3606 has a central or optical element axis

3804. The optical element axis 3804 is tilted with respect to each of the magnet axis 3802, at an angle of 2-12 degrees. The length (L1) of the magnetic polar sources 3604 taken in a direction along the magnet axis 3802, is elongated compared to the length (L2) of the optical element 3606 as taken in the direction parallel to the magnet axis 3802. The magnets 3604 are of sufficient length to extend past the edge of the mounting substrate 3540. As such, the magnets have an overhang portion 3520. The overhang portion 3520 has a mounting substrate 3540 that is sufficiently planar ~~planer~~ to provide for a mounting against a planar ~~planer~~ surface of the interior of the housing case 122. Such elongation of the magnets 3604 ~~3802~~ relative to the optical element 3606 provides the ability to position the optical isolator 3600 with housing case 122 simply by placement of the optical isolator 3600 along the inner surface of housing case 122. Without the overhang portions 3520, the magnetic elements 3604 could not come in direct contact with the planer surface of the interior of the housing case and the structure would tilt out of position.

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The embodiment of reconfigurable laser header 3302, as shown in FIGs. 33A or 33B is used in such a manner that a laser 3304 (whether it is a p-doped laser substrate structure 3200 as shown in FIG. 32, or a n-doped laser substrate structure 3100 as shown in FIG. 31) may be properly biased. The reconfigurable laser header assembly 3302 is shown in FIG. 33A in its configuration to bias a p-doped laser substrate structure 3200, and is shown in FIG. 33B in its configuration to bias an n-doped laser substrate structure 3100. The reconfigurable laser header assembly 3302 includes, in one

embodiment, a header 3306, the laser 3304, an electric conductor 3308, the bias DC positive electric current source 3112, the DC negative current source 3116, and the modulated electric (AC) current source 3114. The header 3306 is provided to support the laser 3304. The electrical conductor 3308 extends around the periphery of the laser 3304, and is electrically connected to the base electric contact 3102 of laser 3304. In FIG. 33A, the base electric contact 3202 ~~3302~~ may be considered as extending around the periphery at the base of the laser 3200. In FIG. 33B, the base electric contact 3102 may be considered as extending around the periphery of the base of the laser 3100.